

Claims

What is claimed is:

1. A method for allocating resources in a circuit switched data network, comprising:
 2. receiving a request for a resource from a device coupled to the circuit switched data network;
 4. granting the resource to the requesting device if the resource is available,
 5. otherwise:
 6. examining a first factor corresponding to an instantaneous quantity of data to be transmitted by the requesting device;
 8. examining a second factor corresponding to a rate of change in the instantaneous quantity of data to be transmitted by the requesting device;
 10. examining a third factor corresponding to a time of utilization of the resource by the requesting device;
 12. granting the resource to the requesting device based on the examination of the first, second and third factors.
1. 2. The method of claim 1, wherein the resource comprises a communications channel in the circuit switched network.
1. 3. The method of claim 2, wherein the communications channel in the circuit switched network comprises a radio frequency communications channel in the circuit switched network.

1 4. The method of claim 1, wherein receiving a request for a resource from a device
2 coupled to the circuit switched data network, comprises receiving a request for a resource
3 from a device coupled to the circuit switched data network when a threshold for
4 requesting the resource has been achieved.

1 5. The method of claim 4, wherein the threshold comprises a depth of a data transmission
2 queue for the device.

1 6. The method of claim 5, wherein the depth of the data transmission queue for the device
2 comprises a moving average of the depth of the data transmission queue for the device.

1 7. The method of claim 4, wherein the threshold comprises a rate of change in a depth of
2 a data transmission queue for the device.

1 8. The method of claim 7, wherein the threshold comprises a moving average of the rate
2 of change in the depth of the data transmission queue for the device.

1 9. The method of claim 4, wherein the threshold comprises a time of utilization of the
2 resource by the device.

1 10. The method of claim 9, wherein the threshold comprises a moving average of the
2 time of utilization of the resource by the device.

1 11. The method of claim 1, wherein receiving a request for a resource from a device
2 coupled to the circuit switched data network when a threshold for requesting the resource
3 has been achieved, comprises adjusting the threshold for requesting the resource based on
4 a number of resources already allocated to the device, and receiving the request for the
5 resource from the device coupled to the circuit switched data network when the threshold
6 for requesting the resource has been achieved.

1 12. The method of claim 1, wherein granting the resource to the requesting device based
2 on the examination of the first, second and third factors further comprises first
3 deallocated the resource from a second device.

1 13. An article of manufacture, comprising:
2 a machine accessible medium, the machine accessible medium providing instructions,
3 that when executed by a machine, cause the machine to allocate resources in a circuit
4 switched data network, comprising:

5 receiving a request for a resource from a device coupled to the circuit switched
6 data network;

7 granting the resource to the requesting device if the resource is available,
8 otherwise:

9 examining a first factor corresponding to an instantaneous quantity of data to be
10 transmitted by the requesting device;

11 examining second factor corresponding to a rate of change in the instantaneous
12 quantity of data to be transmitted by the requesting device;

13 examining a third factor corresponding to a time of utilization of the resource by
14 the requesting device;
15 granting the resource to the requesting device based on the examination of the
16 first, second and third factors.

1 14. The article of manufacture of claim 13, wherein the resource comprises a
2 communications channel in the circuit switched network.

1 15. The article of manufacture of claim 13, wherein the communications channel in the
2 circuit switched network comprises a radio frequency communications channel in the
3 circuit switched network.

1 16. The article of manufacture of claim 13, wherein receiving a request for a resource
2 from a device coupled to the circuit switched data network, comprises receiving a request
3 for a resource from a device coupled to the circuit switched data network when a
4 threshold for requesting the resource has been achieved.

1 17. The article of manufacture of claim 16, wherein the threshold comprises a depth of a
2 data transmission queue for the device.

1 18. The article of manufacture of claim 17, wherein the depth of the data transmission
2 queue for the device comprises a moving average of the depth of the data transmission
3 queue for the device.

- 1 19. The article of manufacture of claim 16, wherein the threshold comprises a rate of
- 2 change in a depth of a data transmission queue for the device.

- 1 20. The article of manufacture of claim 19, wherein the threshold comprises a moving
- 2 average of the rate of change in the depth of the data transmission queue for the device.

- 1 21. The article of manufacture of claim 16, wherein the threshold comprises a time of
- 2 utilization of the resource by the device.

- 1 22. The article of manufacture of claim 21, wherein the threshold comprises a moving
- 2 average of the time of utilization of the resource by the device.

- 1 23. The article of manufacture of claim 1, wherein receiving a request for a resource from
- 2 a device coupled to the circuit switched data network when a threshold for requesting the
- 3 resource has been achieved, comprises adjusting the threshold for requesting the resource
- 4 based on a number of resources already allocated to the device, and receiving the request
- 5 for the resource from the device coupled to the circuit switched data network when the
- 6 threshold for requesting the resource has been achieved.

- 1 24. A method for allocating a communications channel in a circuit switched data
- 2 network, comprising:

3 receiving a request at a communications device coupled to the circuit switched
4 data network to allocate the communications channel to transmit data to a remote
5 communications device capable of being coupled to the circuit switched data network;
6 granting the request if the communications channel is available, otherwise:
7 examining a first factor corresponding to an instantaneous quantity of data to be
8 transmitted to the remote communications device;
9 examining a second factor corresponding to a rate of change in the instantaneous
10 quantity of data to be transmitted to the remote communications device;
11 examining a third factor corresponding to a time of utilization of the
12 communications channel by the remote communications device;
13 allocating the communications channel between the communications device and
14 the remote communications device based on the examination of the first, second and third
15 factors.

1 25. The method of claim 24, wherein the communications channel in the circuit switched
2 network comprises a radio frequency communications channel in the circuit switched
3 network.

1 26. The method of claim 24, wherein receiving a request at a communications device
2 coupled to the circuit switched data network to allocate the communications channel to
3 transmit data to a remote communications device capable of being coupled to the circuit
4 switched data network, comprises receiving a request at a communications device
5 coupled to the circuit switched data network to allocate the communications channel to

6 transmit data to a remote communications device capable of being coupled to the circuit
7 switched data network when a threshold for requesting allocation of the communications
8 channel has been achieved.

1 27. The method of claim 26, wherein the threshold comprises a depth of a data
2 transmission queue for the remote communications device.

1 28. The method of claim 27, wherein the depth of the data transmission queue for the
2 remote communications device comprises a moving average of the depth of the data
3 transmission queue for the remote communications device.

1 29. The method of claim 26, wherein the threshold comprises a rate of change in a depth
2 of a data transmission queue for the remote communications device.

1 30. An article of manufacture, comprising:
2 a machine accessible medium, the machine accessible medium providing instructions,
3 that when executed by a machine, cause the machine to allocate a communications
4 channel in a circuit switched data network, comprising:
5 receiving a request at a communications device coupled to the circuit switched
6 data network to allocate the communications channel to transmit data to a remote
7 communications device capable of being coupled to the circuit switched data network;
8 granting the request if the communications channel is available, otherwise:

9 examining a first factor corresponding to an instantaneous quantity of data to be
10 transmitted to the remote communications device;
11 examining a second factor corresponding to a rate of change in the instantaneous
12 quantity of data to be transmitted to the remote communications device;
13 examining a third factor corresponding to a time of utilization of the
14 communications channel by the remote communications device;
15 allocating the communications channel between the communications device and
16 the remote communications device based on the examination of the first, second and third
17 factors.

1 31. The article of manufacture of claim 30, wherein receiving a request at a
2 communications device coupled to the circuit switched data network to allocate the
3 communications channel to transmit data to a remote communications device capable of
4 being coupled to the circuit switched data network, comprises receiving a request at a
5 communications device coupled to the circuit switched data network to allocate the
6 communications channel to transmit data to a remote communications device capable of
7 being coupled to the circuit switched data network when a threshold for requesting
8 allocation of the communications channel has been achieved.